DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICE CENTER
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METHOD OF TEST FOR PAINT ADHERENCE OF BAKED ENAMEL SIGNS AND GUIDE PLATES

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read "**SAFETY AND HEALTH**" in Section F of this method. It is the responsibility of the user of this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

A. SCOPE

This test method describes a procedure to determine whether effective paint adherence has been provided in the process by which metal sheets (used for signs and guide plates) were prepared for painting.

B. APPARATUS

1. A sharp instrument is required for scratching the paint film.

2. A water bath for submerging specimens shall be maintained at 35 ± 1.7°C.

3. Masking tape shall conform to Code No. 250, manufactured by the Minnesota Mining & Manufacturing Company. The age of the tape not to exceed six months.

C. PREPARATION OF TEST SPECIMENS

1. Test specimens shall consist of 100 by 200-mm metal sheets used for signs or guide plates which has been prepared for painting. They shall be painted in the same manner and at the same time as the lot of signs or guide plates represented by the specimen.

2. Using the sharp instrument, make two diagonal scratches connecting opposite corners on both sides of the specimen. Make the scratches deep enough to penetrate through the paint film and coating, exposing the base metal.

D. TEST PROCEDURE

1. Submerge the specimen in distilled or demineralized water maintained at a temperature of 35°C ± 1.7°C for 190 ± 4 h.

2. At the end of the soaking period, remove the specimen from the water and visually inspect it for evidence of blistering, softening, or peeling of the paint from the base metal on both sides of the specimen.

3. Within 5 min after removing the specimen from the water, wipe the surface dry with a soft cloth and apply a 25-mm wide strip of masking tape with the adhesive side down across the intersection of the diagonal scratches. Apply a strip of tape to each side of the specimen. Press the tape tightly against the surface of the coating by passing a rubber roller across the tape at least twice. Remove the tape with one quick

motion and inspect the specimen for peeling of the paint from the base metal.

4. Subject the specimen to a 180˚ bend around a 12.5-mm round mandrel and inspect for flaking or chipping of the paint from the metal.

E. REPORTING RESULTS

Report the test results on Form TL-0616. Specimens that show any evidence of flaking, chipping, blistering, softening, or peeling of the paint from the metal at any stage of the test shall be reported as "failing."

F. SAFETY AND HEALTH

This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Prior to handling, testing or disposing of any waste materials, testers are required to read: Part A (Section 5.0), Part B (Sections: 5.0, 6.0 and 10.0) and Part C (Section 1.0) of Caltrans Laboratory Safety Manual. Users of this standard do so at their own risk.

REFERENCES:
None

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